Abstracts

A COMPARISON OF DIFFERENT METHODS OF ESTIMATING FRAC TURE RISK AND FRAC TURE RISK REDUCTION IN COST-EFFECTIVENESS ANALYSES OF THE OSTEOPO SIS TREATMENT BAZEDOXIFENE Boström F, Coelho J, Ström C, McCloskey E, Odén A, Johannson H, Kanis JA, Hensecke O, Church JM, Back E, Solberg A, Stockholms Centrum, Sheffield, Stockholm, Umeå University, Gothenburg, Gothenburg, Sweden, *University of Sheffield, Gothenburg, Gothenburg, England, †University of Sheffield, Sheffield, Sheffield, UK, ‡University of Sheffield, Gothenburg, Gothenburg, Sweden, §University of Sheffield, Sheffield, Sheffield, UK, ©University of Sheffield, Sheffield, Sheffield, UK, ©Osteoporosis Centre, Sheffield, Sheffield, UK, *University of Sheffield, Gothenburg, Gothenburg, Sweden, ‡University of Sheffield, Gothenburg, Gothenburg, Sweden, §University of Sheffield, Sheffield, Sheffield, UK, ©University of Sheffield, Sheffield, Sheffield, UK

OBJECTIVES: To compare the traditionally used approach for fracture risk assessment in cost-effectiveness analysis (CEA) compared to the use of FRAX® models based on multiple individual clinical risk factors (CRFs) using the osteoporosis treatment bazedoxifene. METHODS: In CEA of osteoporosis the fracture risk has traditionally been calculated with risk-adjustments based on age, bone mineral density (BMD) and prior fracture. The treatment effect has been derived from clinical trials and the same efficacy has been assumed irrespective of the fracture risk of the population. A novel approach to fracture risk assessment considers the contribution of 8 individual CRFs on fracture risk and mortality using the FRAX® tool. The application of FRAX® to clinical trial populations has shown that treatment efficacy increased with higher fracture risk. The cost-effectiveness was estimated in a Markov cohort model with US data using a health care perspective. The CEA compared the osteoporosis treatment bazedoxifene (BZA) to no treatment in women with a T-score for femoral neck BMD of -2.5 SD and previous fracture. The analysis was performed from a clinical trial perspective and the same efficacy has been assumed irrespective of the fracture risk of the population. A novel approach to fracture risk assessment considers the contribution of 8 individual CRFs on fracture risk and mortality using the FRAX® tool. The application of FRAX® to clinical trial populations has shown that treatment efficacy increased with higher fracture risk. The cost-effectiveness was estimated in a Markov cohort model with US data using a health care perspective. The CEA compared the osteoporosis treatment bazedoxifene (BZA) to no treatment in women with a T-score for femoral neck BMD of -2.5 SD and previous fracture. The analysis was performed from a clinical trial perspective and the same efficacy has been assumed irrespective of the fracture risk of the population. A novel approach to fracture risk assessment considers the contribution of 8 individual CRFs on fracture risk and mortality using the FRAX® tool. The application of FRAX® to clinical trial populations has shown that treatment efficacy increased with higher fracture risk. The cost-effectiveness was estimated in a Markov cohort model with US data using a health care perspective. The CEA compared the osteoporosis treatment bazedoxifene (BZA) to no treatment in women with a T-score for femoral neck BMD of -2.5 SD and previous fracture. The analysis was performed from a clinical trial perspective and the same efficacy has been assumed irrespective of the fracture risk of the population.

RESULTS: The cost per QALY gained with bazedoxifene treatment was estimated at $14,712 using the old approach and $33,650 using the FRAX®-approach. This is due to differences in the assessment of fracture risk efficacy, fracture risk and mortality.

CONCLUSIONS: The adavantage of more accurate assessment of fracture risk assessment and its use as a denominator of efficacy has important consequences for CEA.

ECONOMIC EVALUATION OF THE USE OF HYLAN G-F 20 IN THE HANDLING OF SEVERE KNEE OSTEOARTHRITIS Salinas Escudero G, Moroño J, Zapata U, Herrera Rodriguez G, Hospital Infantil de México Federico Gómez, Mexico DF, District Federal, Mexico, Gola Park, Mexico DF, Mexico, Gómez, Mexico DF, Mexico

OBJECTIVES: Knee osteoarthritis is a multifactorial, progressive and incurable rheumatic ailment; most treatments look for a maximum recovery of mobility and functionality of the knee joint, with a minimum risk possibility. Due to its high cost and invasive character, gonarthrosis surgical treatment is reserved, according to the clinical practice guidance available in Mexico, for severe pain and joint functionality limitation cases; defined as knee osteoarthritis present in IV degree, or functional class III onwards. This study evaluates cost and effectiveness of the use of Hylan G-F 20 vs. intraarticular steroids to withhold surgery in patients with severe knee osteoarthritis.

METHODS: Cost-effectiveness analysis using a decision tree to simulate a hypothetical cohort behavior of patients with severe knee osteoarthritis for a period of two years, from the perspective of the health service supplier. Costs were estimated using prices of 2008 and are expressed in US dollars (exchange rate of 11.14 pesos/1 US dollar). RESULTS: With Hylan G-F 20, 94.6% of patients did not require surgery during the analysis period vs. 50%, in the case of those under intraarticular steroid treatment. Expected treatment costs: Hylan G-F 20, $20810.6; and intraarticular steroids, $4591.2. The average cost-effectiveness of treatments: Hylan G-F 20, $20205.5 and intraarticular steroids, $9111.6. Incremental analysis shows Hylan G-F 20 as dominant alternative. Different sensitivity analyses corroborate the dominance relationship exercised by Hylan G-F 20 over the steroid treatment. CONCLUSIONS: Hylan G-F 20 is more effective and less expensive alternative than steroid treatment to withhold surgery in patients with severe knee osteoarthritis.


OBJECTIVES: To determine the cost-effectiveness of etanercept plus methotrexate (MTX) versus rituximab plus MTX in the treatment of rheumatoid arthritis (RA). METHODS: A Markov model was developed to compare the cost and effectiveness of etanercept 25 mg twice-weekly vs. rituximab 2 × 500 mg infusion+MTX and rituximab 2 × 1000 mg infusion+MTX (labeled dosage) in RA patients with an inadequate response to disease-modifying anti- rheumatic drugs. The primary measurement of clinical outcomes was based on remission (Disease Activity Score 28 joint count <2.6). The model incorporated major and minor infectious events, discontinuation due to inadequate efficacy or adverse event, and rituximab re-treatment within the one year time horizon. Data from clinical trials (TEMPO and SERENE) were used. Direct and resource-use costs were based on government-reported public costs. Sensitivity analysis was conducted by varying efficacy and cost parameters by ± 30%. RESULTS: The annual total therapy cost for rituximab was $EX$ 7,434 (2 × 500 mg) and $EX$ 137,223 (2 × 1000 mg), and $EX$ 119,133 for etanercept. The incremental cost-effectiveness ratio (ICER) of etanercept vs. rituximab 2 × 500 mg was $EX$ 201,581 per additional patient achieving remission. Etanercept was cost saving compared to rituximab 2 × 1000 mg. With a hypothetical budget of $EX$10,000,000 for rituximab or etanercept, the number of patients achieving remission would be 7 (2 × 500 mg) and 4 (2 × 1000 mg) for rituximab and 23 for etanercept. Sensitivity analysis showed that etanercept continued to have more patients achieving remission than rituximab (for both dosage forms) even if drug cost and efficacy were varied ± 30%, given a defined budget. CONCLUSIONS: The results suggest that etanercept appears to be cost-effective compared to rituximab. For the labeled and commonly used rituximab dosage (2 × 1000 mg), etanercept appears to be a cost-saving alternative. These findings were robust for plausible ranges of effectiveness and drug acquisition costs.

AN ECONOMIC ANALYSIS COMPARING THREE COMBINATIONS OF TUMOR NECROSIS FACTOR-ALPHA AGENTS FOR THE TREATMENT OF RHEUMATOID ARTHRITIS Morgan B, Sanger H, Johnson ML, University of Houston, Houston, TX, USA

OBJECTIVES: Purpose of the study was to conduct a cost-effectiveness analyses between three combinations of Tumor Necrosis Factor-Alpha agents used in treatment of rheumatoid arthritis. The study compared adalimumab plus methotrexate (ADA+MTX), infliximab plus methotrexate (INF+MTX), etanercept plus methotrexate (ETN+MTX) with methotrexate (MTX) monotherapy (control). METHODS: The patient's perspective of cost was used. Costs calculated for a period of one year included direct medical costs (drug acquisition costs, monitoring costs, and adverse drug event costs) and indirect costs (estimated using human capital approach). All costs were calculated in 2007 dollars and adjusted using a discounting factor of 3%. Outcome of therapeutic options was measured using the American